

Remarks

The present Amendment is submitted in response to the Office Action dated August 13, 2008, which set a three-month period for response.

Reconsideration and allowance of the application in view of the amendments above and the following remarks is respectfully requested.

In the Office Action, claims 1-4 and 6-8 are rejected under 35 USC §102(b) as anticipated by US Patent No. 5,678,521 to Thompson, et al. (Thompson). Claim 5 is rejected under 35 USC §103(a) as unpatentable over Thompson in view of US Patent No. 5,381,297 to Weber (Weber). Claim 9 is rejected under 35 USC §103(a) as unpatentable over Thompson in view of US Patent No. 6,807,947 to Coates, et al. (Coates).

In response to the rejection of claim 5 under 35 USC §112, second paragraph, as indefinite, applicants have amended claim 5 to read that a lesser current flows after time t_3 , the lesser current being at least so great that a minimum holding force of a fuel supply control valve is ensured, i.e., once closed the valve remains closed. This makes sense when looking at the third point in time (t_3) in Figs. 5 and 6, in cooperation with the text at page 10, lines 7-14. That is, as time continues, pressure p in delivery chamber 26 reaches, at third point in time t_3 , a pressure p_1 at which it can be assumed that solenoid valve 22 can be held closed essentially solely by the force of the pressure that has built up.

The invention operates to reduce electromagnetic force F_M acting on solenoid valve 22 by further reducing the voltage to a fourth voltage U_4 . The consequence of the lowered fourth voltage U_4 is a corresponding lowered coil current I , which is approximately a minimal current required to maintain the solenoid in its now closed state, i.e., it takes less current to maintain closed than to switch to closed. Applicants, therefore, respectfully request withdrawal of the rejection of claim 1 under 35 USC §112, second paragraph.

In response to the objection to the claims, claims 3-6 are amended as shown above to address each of the points raised by the Examiner. Applicants, therefore respectfully request withdrawal of the objections to the claims. Independent claims 1 and 7 are amended to add the limitation that the smaller effective value of the second voltage (U_2) is realized at the first point in time t_1 by pulse-width modulating the first voltage (U_1). All of the claims but for claims 2 and 8 are amended to address formal matters.

Turning now to the substantive rejection of the claims, applicant respectfully submits that claims 1-4 and 6-8 are patentable over Thompson, and claims 5 and 9 are patentable of Thompson in combination with Weber and Coates, respectively, for at least the following reasons.

After amendment, independent claim 1 call outs a method for controlling a solenoid valve (22), particularly in a motor vehicle, in the case of which a first voltage (U_1) is applied to a coil (21) of the solenoid valve (22) until a first point in time t_1 , then a second voltage (U_2) with a smaller effective value is applied,

wherein the first point in time t_1 precedes a point in time at which the solenoid valve (22) reaches a final position, and wherein the smaller effective value of the second voltage (U_2) is realized by pulse-width modulating the first voltage (U_1). After amendment, independent claim 7 calls out a device in kind.

Thompson, as distinguished, discloses a method of controlling a solenoid by which a first voltage generated by a boost circuit is initially applied to a coil of the solenoid, followed by a second voltage. The boost circuit is supplied by a battery having a fixed voltage, and the second voltage is the battery fixed voltage. The second or battery fixed voltage is smaller than the first voltage because the booster circuit transforms the battery fixed voltage to the higher level first voltage. Thompson, therefore, does not disclose a second voltage (U_2) with a smaller effective value applied at a first point in time t_1 that precedes a point in time at which the solenoid valve (22) reaches a final position, and which second voltage (U_2) is realized by pulse-width modulating the first voltage (U_1). Because amended independent claims 1 and 7 recite this limitation, which Thompson does not, Thompson does not anticipate the invention as claimed.

Applicants further respectfully assert that Thompson is not a proper reference under 35 USC §102 pursuant to the guidelines set forth in the last paragraph of MPEP §2131, where it is stated that "a claim is anticipated only if each and every element as set forth in the claims is not found, either expressly or

inherently described, in a single prior art reference," and that "the identical invention must be shown in as complete detail as is contained in the ... claim."

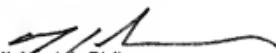
Amended independent claims 1 and 7 are therefore patentable under 35 USC §102(b) over Thompson. Claims 2, 3, 4, 6 and 8, which depend from claim 1, also are patentable under section 102(b) over Thompson for at least the same reasons. Applicants, therefore, respectfully request withdrawal of the rejection of claims 1-4 and 6-8 over Thompson under section 102(b), and the allowance of each of claims 1-4 and 6-8.

In response to the rejection of claims 5 and 9 by Thompson under section 103(a) in view of Weber and Coates, respectively, applicants assert that Weber and Coates suffer the same shortcomings of Thompson as stated above. Weber applies a voltage signal for controlling a solenoid valve that comprises six voltage steps. Both Weber and Coates, however, like Thompson, fail to disclose, teach or suggest a second voltage (U_2) with a smaller effective value applied at a first point in time t_1 that precedes a point in time at which the solenoid valve (22) reaches a final position, and which second voltage (U_2) is realized by pulse-width modulating the first voltage (U_1). Applicants, therefore, respectfully request the withdrawal of the rejections of claims 5 and 9 under section 103(a) by Thompson respectively combined with Weber and Coates.

Accordingly, the application as amended is believed to be in condition for allowance. Action to this end is courteously solicited. However, should the Examiner have any further comments or suggestions, the undersigned would

very much welcome a telephone call in order to discuss appropriate claim
language that will place the application in condition for allowance.

Respectfully submitted,



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